

IN THE CLAIMS

A Listing of the Claims follows:

1. (Previously Presented) An apparatus for forming electrophoresis gels, the apparatus including:

a container having a base and sides so as to define a chamber therein for receiving a plurality of gel cassettes;

an inlet port positioned in the base of the container and in communication with the chamber; and

a baffle positioned over the inlet port, such that, in use, when fluid passes through the inlet port into the chamber, the baffle substantially reduces fluid turbulence and vertical fluid movement in the vicinity of the inlet port during flow of the fluid into the chamber.

2. (Previously Presented) The apparatus of claim 1 wherein a mesh or honeycomb structure is positioned between the inlet port and the baffle.

3. (Previously Presented) The apparatus of claim 1 or claim 2 wherein the base of the apparatus is substantially square and the inlet port is positioned in the middle of the base of the container with the baffle placed directly over the inlet port oriented in substantially the same plane as the base.

4. (Previously Presented) The apparatus of claim 3 wherein the baffle is substantially square having a side length of $1/2$ to $1/4$, and about $1/3$ of the length of the sides of the square base.

5. (Previously Presented) The apparatus of claim 1 wherein the baffle is substantially flat and is thin in cross-section to minimize flow turbulence as fluid passes around and over the baffle and is disposed between 3 to 10 mm above the inlet port.
6. (Previously Presented) The apparatus of claim 1 wherein the container defines or forms part of a vacuum chamber the arrangement being such that gel cassettes may be degassed in the vacuum chamber and then filled *in situ* with initiated monomer solutions arranged to polymerize in the cassettes.
7. (Previously Presented) The apparatus of claim 6 wherein the container has at least three sections including, a base section including the inlet and baffle, a mid-section and a top section.
8. (Previously Presented) The apparatus of claim 1 wherein the container is formed from aluminum or stainless steel and incorporates heating and cooling means, such that application and dissipation of heat may be used to advantageously control polymerization in the container.
9. (Previously Presented) A process of forming an electrophoresis gel in a plastic cassette, the process including the steps of:
- (a) pretreating the plastic cassette to substantially remove polymerization initiators present therein;
 - (b) preparing a monomer solution of acrylamides and treating the monomer solution to substantially remove any oxygen or other gaseous polymerization inhibitors therefrom;
 - (c) preparing initiator and co-initiator solutions required to induce polymerization of the monomer solution, the solutions being treated so as to substantially remove any oxygen or other gaseous polymerization inhibitors therefrom;
 - (d) mixing the monomer solution with the initiator and co-initiator solutions to form an

initiated monomer solution;

- (e) applying the initiated monomer solution to the plastic cassette; and
 - (f) allowing the initiated monomer solution to polymerize in the plastic cassette;
- wherein steps (e) and (f) of the process are carried out in the apparatus of claim 1.

10. (Previously Presented) The process of claim 9 wherein steps (e) and (f) are carried out in the apparatus of claim 2.

11. (Previously Presented) The process of claim 9 wherein steps (a), (e) and (f) are carried out in the apparatus of claim 6.

12. (Previously Presented): The process of claim 9 wherein the cassettes are made from a synthetic (plastic) material selected from the group consisting of: polyesters (PEN, PET, PETG), polyolefins (polyethylene, polypropylene), polystyrene, and any copolymers (SAN), polyacrylics(polyMMA) and any copolymers and vinylidene chloride copolymers.

13. (Previously Presented) The process of claim 9 wherein step (a) includes exhaustive vacuum treatment, optionally with inert gas purging.

14. (Previously Presented) The process of claim 13 wherein the inert gas is nitrogen.

15. (Previously Presented) The process of claim 9 wherein the duration of the pretreatment step (a) is from 1 to 12 hours.

16. (Previously Presented) The process of claim 9 wherein steps (e) and (f) are carried out in an inert gas atmosphere.

17. (Previously Presented) An apparatus for forming electrophoresis gels, the apparatus

comprising:

a container defining a chamber for receiving a fluid, the container further including an inlet port in communication with the chamber for introducing the fluid to the chamber; and
a baffle positioned relative to the inlet port so as to reduce fluid turbulence and vertical movement proximate the inlet port.